Docket No.: 00306-00142-USU
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Johnnie R. Roberts et al.

Application No.: 09/916,611 Confirmation No.: 2968

Filed: July 27, 2001 Art Unit: 1616

For: MANUFACTURE AND USE OF A HERBICIDE FORMULATION Examiner: A. N. Pryor

1.132 DECLARATION

MS AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
Dear Sir:

1. I, Johnnie Roberts am a citizen of the United States of America and hereby declare and say as follows:

2. I am one of the inventors of the above referenced application. I am employed by Helena Chemical Company as a Manager of the Product Development Laboratory in Memphis, Tennessee. A copy of my most recent Curriculum Vitae is attached as Appendix A. In view of the above qualifications, I consider myself an expert in the field of agricultural compositions.
3. I have read and reviewed U.S. application Serial No. 09/916,611 (" '611 application") including the examples.
4. I have read U.S. Patent No. 5,558,806 issued to Policello ("Policello"),
5. I have had the following experiments conducted under my supervision.
6. I have had Examples 1-3 of the specification remade to determine the pH value of the examples:

7. Example 1:
15% 2,4-D acid,
85% C11 alcohol (3EO) ethoxylate.

8. Example 1 has a pH of 2.7 when mixed with deionized water at 1.0% v/v.

9. Example 2:
10% dicamba acid
85% Nonylphenol (6EO) ethoxylate

10. Example 2 has a pH of 2.4 when mixed with deionized water at 1.0% v/v.

11. Example 3:
10% MCPA acid
90% Pluronic L31

12. Example 3 has a pH of 2.6 when mixed with deionized water at 1.0% v/v.

13. In the '611 compositions, the polyalkyleneoxide polysiloxane surfactants disclosed by Policello would not be stable at a low pH.

14. Further evidence is shown in the article scanned from ASTM Publication STP 1234 (see Appendix B). In this article by Policello et.al., the inventor himself acknowledges the pH sensitivity of previously known polyalkyleneoxide polysiloxane surfactants.

15. None of the examples from the Policello patent contained any amount of any herbicide.

16. The Policello patent is centered on synergistic combinations of non-silicone surfactants combined with silicone surfactants. Policello measures such synergy by determining the spread diameter on transparencies (polyester film). However, the silicone surfactant is unstable in the acidic conditions required by formulating chlorinated carboxylic acid

herbicides in the acidic form. For these reasons, the exemplary art that I elected to use for the testing was:

17. **Silicone containing example 4**

Ingredients	% by weight
2,4-D acid (in the acid form)	20.0%
Silwet L-77	80.0%

18. Silwet L-77 is identified as Silicone 1 in Column 10 of the Policello patent.

19. I believe that Policello probably intended his surfactant compositions to be combined with the normal formulations of the herbicides available at the time of his application. Policello lists Fomasafen in column 8, line 38, but his Example 5, in which Policello uses his claimed invention as an adjuvant with REFLEX®, which is actually the sodium salt of Fomasafen. At the time of Policello's invention, the commercial forms of 2,4-D were either amine salts or ester formulations. Because the amine salt form is water soluble, I selected the following comparative example:

20. **Silicone containing example 5**

Ingredients	% by weight
Dimethylamine salt of 2,4-D	20.0%
Silwet L-77	80.0%

21. I had prepared these formulations and then let the samples stand a room temperature for 4 days. After 4 days, the following solutions were prepared:

Solution A 0.10% of Silicone containing example 4 in 99.9% water

Solution B 0.10% of Silicone containing example 5 in 99.9% water

Solution C 0.08% of Silwet L-77 in 99.92% water (Chosen to provide equivalent amounts of the pure silicone surfactant as the formulated examples used in solutions A and B)

22. I then measured the spread diameters of 10 microliter droplets after 30 seconds (Policello column 11, line 34), on polyester film. The results are shown below:

Solution ID	Spread diameter of a 10 microliter droplet
Solution A	26 mm
Solution B	40 mm
Solution C	40 mm

23. The loss of spread ability as compared with the pure silicone surfactant (Solution C) even after only 4 days is evident in Solution A, which contains the Policello silicone surfactant and 2,4-D in the acid form. Solution B, which contains the dimethylamine salt form of 2,4-D and Policello's silicone surfactant does not show any loss of spreading ability.

24. Therefore the acid herbicide would not be able to fully dissolve in the silicone surfactant according to Policello, without significant degradation of the silicone surfactant.

25. I believe that this clearly demonstrates that the silicone surfactants of the Policello patent are unsuitable for use as the solubolizing surfactant of '611 invention.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18

of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

	5-13-08
Johnnie Roberts	Date